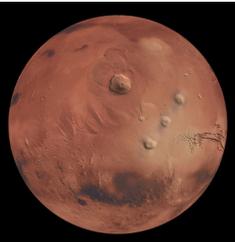
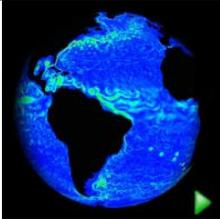


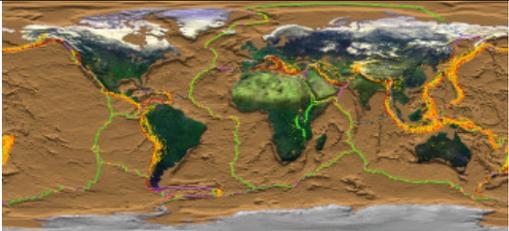
Water Exhibit Section 3.2 — Science on a Sphere (SOS)

The Blue Planet Script

FINAL, Ver.17; Date: Sept 17, 2007

	#	AUDIO	VIDEO
00:00:00	1.0	Section 1 – <i>Blue Planet</i> {Intertitle and Title are the same.} RT: 00:45	
			Title: <i>Blue Planet</i>
14:23 20:27 21:11 26:08	1.1	Water defines our world, from shaping the surface of the planet to supporting all life on Earth. Water in abundance makes Earth remarkably different from its neighbors in the solar system.	Fade from black 
26:15 28:21	1.2	Mars is a frozen desert.	 data set: Mars
29:04 31:16	1.3	Venus is hot and dry.	 Venus – radar view or infra red view
32:11 35:01 35:13 36:22	1.4	The Moon is both cold and hot... and waterless.	 Earth's Moon
37:17 38:11	1.5	And then {beat}	{dissolve to Blue Marble}
38:23 39:21 40:02 48:29 49:13 54:20	1.6	there is Earth. Often called “The Blue Planet” because from space we see that most of our planet’s surface—nearly 71%—is covered in water. From out here Earth’s blue, watery surface appears calm and still.	 Data set: Blue Marble

	#	AUDIO	VIDEO
55:24 1:00:09 1:00:26 1:03:15 1:03:25 1:08:20	2.1	<p>Section 2 <i>Water Drives our Planet</i> RT: 02:00</p> <p>But Earth’s water is constantly moving in a complex and unending cycle,</p> <p>shifting between solid, liquid, and vapor,</p> <p>moving between Earth’s sky, its surface, and the ground beneath our feet.</p>	 <p>image from Leya Evelyn</p>
1:09:22 1:11:26 1:12:16 1:19:27 1:20:16 1:25:22 1:27:02 1:30:26	2.2	<p>Water is on the move in the atmosphere.</p> <p>Water vapor—usually invisible but colored grey in this animation—moves heat from the equator toward the poles.</p> <p>Where warm, moist air rises to meet cold air, swirling white clouds form.</p> <p>Water vapor transforms itself into droplets or icy crystals, {beat}</p>	 <p>data set: Water vapor animation</p>  <p>data set: weather free from NOAA.</p>
1:31:14 1:40:16 1:41:10 1:50:05	2.3	<p>and falls to Earth as rain or snow, supporting life on the continents and sculpting landscapes as it moves across Earth’s surface.</p> <p>In this twelve-month sequence, snow cover comes and goes, tropical areas green up then turn brown as precipitation changes with the seasons.</p>	<p>Data set: Through The Seasons</p>
1:50:28 1:53:08 1:53:26 2:04:06 2:04:19 2:08:18	2.4	<p>Water is on the move in the world’s oceans.</p> <p>Currents of water, like huge ocean “rivers,” move around the globe.</p> <p>Warm tropical waters—shaded red in this animation—run towards the poles.</p> <p>Cold polar waters—here shaded blue—return to the tropics.</p> <p>Endlessly cycling, these currents help regulate Earth’s climate.</p>	 <p>NASA animation of ocean currents</p>
2:09:14 2:12:25 2:13:20	2.5	<p>Even deep beneath Earth’s surface, water is on the move.</p> <p>There may be many times as much water “locked” up in the minerals that make up Earth’s mantle as there is in all the world’s</p>	<p>The last image from above peels away as the sphere rotates to reveal (momentarily) a deep brown that suggests the “mantle” beneath Earth’s crust.</p> <p>Crust is replaced with tectonic plates are placed in quick succession (like a jig saw puzzle quickly being assembled).</p>

2:20:12		oceans.	To form the image below.
2:21:14 2:26:12 2:26:24 2:35:08	2.6	The water-bearing minerals in Earth's mantle makes rock more elastic under heat and pressure, {beat} making possible the movement of continents across the surface of the Earth, causing volcanoes, earthquakes and the rise of new mountain ranges.	 Data set: http://svs.gsfc.nasa.gov/vis/a000000/a002800/a002893
	3.0	Section 3.0 How Much and Where? RT: 01:30	
2:36:09 2:41:09 2:41:24 2:48:25 2:49:14 2:53:13 2:53:21 2:56:06	3.1	Earth has a vast amount of water, but only a small fraction is suitable for human use. What we drink and bathe in; what we use to grow food; what we depend on for life is fresh water. Fresh water sustains all life outside the oceans. And there is surprisingly little of it.	 Data set: Blue Marble
2:56:28 2:59:13 3:00:08 3:06:00	3.2	Just how much of Earth's water is fresh water? The squares that you now see covering the sphere represent all the water in and on Earth.	Surface of the sphere is now covered with a blue grid.
3:06:14 3:10:13 3:10:28 3:13:08 3:14:00 3:15:20 3:16:03 3:18:21	3.3	The oceans hold 97% of Earth's water. This water is too salty for our needs. Let's remove the ocean water. The remaining 3% is fresh water.	Ninety seventy percent of the blue "units" on the sphere fade to black (or another color.) A thin blue line wraps around the girth of the sphere.
3:19:03 3:26:18 3:27:07 3:34:08	3.4	But 2/3rds of that is locked up in glaciers, icecaps, permafrost and deep underground. It's fresh water but we can't easily get to it. When we remove the squares that represent inaccessible fresh water, we are left with this slender ring of blue.	Two thirds of the blue fades to black (or another color.) a very thin blue line wraps around the girth of the sphere.
3:35:21 3:41:16	3.5	<i>Less than 1%</i> of Earth's water supports all life outside of the oceans. And that is not evenly distributed across the planet. The yellow {or other color-tbd} highlighting on	data set: per capita renewable water supply

3:42:14		this map points to places in the world where freshwater supplies are inadequate for the human populations living there.	
3:46:00 3:47:24		Frequent water shortages in these areas affect not just people, but numerous species of plants and animals that need fresh water to live.	
3:55:20 3:56:12			
4:04:12			
	4.0	Section 4 <i>Limited Resource, Growing Demands</i> RT: 01:00	
4:06:02 4:10:16	4.1	Human demands on water—a precious and limited resource—are growing.	
4:11:07 4:18:20	4.2	Experts predict that by 2025 over *2.4 billion people will live without adequate supplies of fresh water.	data set: croplands The more intense the color, the more land is used for crops
4:19:16		Most of the demand for fresh water isn't directly from our homes, but from industry and agriculture.	
4:25:21 4:26:02		This map shows where crops are raised around the world. The darker the color, the more land is devoted to producing crops.	
4:33:23 4:34:10		Agriculture represents the largest share of human freshwater use: an astounding 70%.	
4:40:25			
	5.0	Section 5 <i>Water Planet</i> RT: 00:45	
4:41:29 4:52:16	5.1	This animation shows how Earth's human population has grown over 200 years, from nearly 1 billion people in 1800 to over six and a half billion people today.	Data: global population growth over 200 years.
4:53:14 4:57:28 5:00:18	5.2	At night, city lights pinpoint our densest population centers. With so many people on Earth, collective choices about how we use water do have a global impact.	{Dissolve to Earth at Night}
5:07:01			
5:07:17 5:12:12 5:12:26	5.3	The human impact on Earth's water is greater than from any other form of life. Water is the foundation for life—not just ours, but all life on Earth.	
5:19:03 5:19:18		We can choose to protect it so that generations to come may also appreciate the magnificence of our water planet.	Data set: Blue Marble

5:27:21			
6:09:16		TRT: 6:00	

**SCRIPT IN TEXT-ONLY FORMAT
[IN PREPARATION FOR CAPTIONING]**

{BEAT} = pause for visitors to take in new topic or new visualization.

Underlined text = place emphasis on word(s).

Blue Planet

Water defines our world, {BEAT} from shaping the surface of the planet to supporting all life on Earth.

Water in abundance makes Earth remarkably different from its neighbors in the solar system.

{tiny BEAT}

Mars is a frozen desert.

{ tiny BEAT}

Venus is hot and dry.

{ tiny BEAT}

The Moon is both cold and hot and waterless.

{ tiny BEAT}

And then there is Earth.

{BEAT}

Often called “The Blue Planet” because from space we see that most of our planet’s surface—nearly 71%—is covered in water.

From out here Earth’s blue, watery surface appears calm and still.

{BEAT}

Water Drives our Planet

But Earth’s water is constantly moving in a complex and unending cycle, shifting between solid, liquid, and vapor, moving between Earth’s sky, its surface, and the ground beneath our feet.

{BEAT}

Water is on the move in the atmosphere.

Water vapor—usually invisible but colored grey in this animation—moves heat from the equator toward the poles.

Where warm, moist air rises to meet cold air, swirling white clouds form.

Water vapor transforms itself into droplets or icy crystals, and falls to Earth as rain or snow, supporting life on the continents and sculpting landscapes as it moves across Earth’s surface.

{BEAT}

In this twelve-month sequence, snow cover comes and goes, tropical areas green up then turn brown as precipitation changes with the seasons.

{BEAT}

Water is on the move in the world's oceans.

Currents of water, like huge ocean "rivers," move around the globe.

Warm tropical waters—shaded red in this animation—run towards the poles. Cold polar waters—here shaded blue—return to the tropics.

Endlessly cycling, these currents help regulate Earth's climate.

{BEAT}

Even deep beneath Earth's surface, water is on the move.

There may be many times as much water "locked" up in the minerals that make up Earth's mantle as there is in all the world's oceans.

The water-bearing minerals in Earth's mantle makes rock more elastic under heat and pressure, making possible the movement of continents across the surface of the Earth, causing volcanoes, earthquakes and the rise of new mountain ranges.

{BEAT}

How Much and Where?

Earth has a vast amount of water, but only a small fraction is suitable for human use.

What we drink and bathe in; what we use to grow food; what we depend on for life is fresh water.

Fresh water sustains all life outside the oceans.

{BEAT}

And there is surprisingly little of it.

Just how much of Earth's water is fresh water?

The squares that you now see covering the sphere represent all the water in and on Earth.

The oceans hold 97% of Earth's water.

This water is too salty for our needs.

Let's remove the ocean water.

The remaining 3% is fresh water.

But 2/3rds of that is locked up in glaciers, icecaps, permafrost and deep underground. It's fresh water but we can't easily get to it.

When we remove the squares that represent inaccessible fresh water, we are left with this slender ring of blue.

Less than 1% of Earth's water supports all life outside of the oceans.

And that is not evenly distributed across the planet.

The yellow highlighting on this map points to places in the world where freshwater supplies are inadequate for the populations living there.

Frequent water shortages in these areas affect not just people, but numerous species of plants and animals that need fresh water to live.

{BEAT}

Limited Resource, Growing Demands

Human demands on water—a precious and limited resource—are growing.

Experts predict that by 2025 over 2.4 billion people will live without adequate supplies of fresh water.

Most of the demand for fresh water isn't directly from our homes, but from industry and agriculture.

This map shows where crops are raised around the world. The darker the color, the more land is devoted to producing crops.

Agriculture represents the largest share of human freshwater use: an astounding 70%.

{BEAT}

Water Planet

This animation shows how Earth's human population has grown over 200 years, from nearly 1 billion people in 1800 to over six and a half billion people today.

{BEAT}

At night, city lights pinpoint our densest population centers.

With so many people on Earth, collective choices about how we use water do have a global impact.

{BEAT}

The human impact on Earth's water is greater than from any other form of life.

Water is the foundation for life—not just ours, but all life on Earth.

We can choose to protect it so that generations to come may also appreciate the magnificence of our water planet.